Standard Operating Procedure for Continuous pH Monitoring

Date and Signature: The laboratory must sign and date the standard operating procedure (SOP).

Scope of Work: Describe your discharge and where your discharge goes.
Example: Industrial discharge to XYZ Utility Authority. List the permitted range for the discharge.

Equipment: List the name and model number for your pH monitoring system. Identify whether or not you can remove your electrode from the waste stream for calibration. This determines the type of calibration that you must do. Include a copy of your operating manual for the pH system if available. Laboratories that have probes that can be removed from the waste stream must use the direct method of calibration. Those with fixed probes that cannot be removed from the waste stream must follow the indirect method of calibration. The system should be capable of temperature compensation.

Reagents:
List the types of pH buffers that you use for calibration. There must be at least two buffers used that are at least three units apart. Bracket the range of your expected pH. For example, if your discharge pH is normally 7.20 units, then the buffers 4.0 and 10.0 could be used to bracket the expected pH for your facility. Fresh buffer aliquots must be used for each calibration and must be discarded after use. The buffer solutions must have an expiration date marked on the bottle. Buffer solutions must be discarded once they expire. The date received and the date first opened must be marked on the bottles of buffer solutions.
****Note: Laboratories must request that expiration dates be marked on the purchased buffer bottles. In some cases, the expiration dates are not marked on the buffer bottles by the manufacturers. Laboratories must request the expiration dates at the time of the order.**

Maintenance:
Describe the cleaning procedures for the facility pH probe. Describe your routine maintenance for your pH system including how often the probe is cleaned. Maintenance records must be kept for the equipment used at the facility.

Calibration Procedure:
Include a step by step description of the procedure that you follow for calibration. Meters must be calibrated at a minimum of one time each week

Records must be retained that include the buffers used, their actual readings on the day of calibration, the date and time of calibration and the analyst's signature. If your strip chart is calibrated (shows the actual numerical value for any line on the strip) then the information can be written directly on the strip chart. If your strip chart is not calibrated, then a separate log must be kept that includes all of the required information. Bound notebooks are preferable over loose leaf pages. Each pH value must be traceable to the required weekly calibration records. The meter must be capable of temperature compensation or the temperature of the sample must be reported with the pH results. Example: pH 7.00 at 25°C.

All records must be retained for a minimum of five years.